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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,602	03/30/2004	Shinichiro Nohdo	9792909-5846	3173

26263 7590 12/11/2006

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EXAMINER

SLOMSKI, REBECCA

ART UNIT PAPER NUMBER

2112

DATE MAILED: 12/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/812,602

Applicant(s)

NOHDO, SHINICHIRO

Examiner

Rebecca C. Slomski

Art Unit

2112

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 9-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-20 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant election of **Group I: Claims 1-8** in the reply filed on November 20, 2006 is acknowledged. Since applicant fails to mention with or without traverse it is understood that applicant has elected without traverse. Furthermore, no arguments contrary to the restriction requirement were presented.
2. Claims **1-20** are pending in this application.
3. Claims **1-8** are considered for the examination purpose.
4. Claims **9-20** withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim..

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims **1, 4, 5, 6, 7, and 8** are rejected under 35 U.S.C. 102(b) as being anticipated by Tominaga (U. S. Patent # 5,525,840).

- 6.1. With respect to claims **1** and **6**, Tominaga teaches a system of alignment marks:

6.1.1. "composed of a plurality of unit markers (dot patterns)" (Col. 5, L 53-64)

6.1.2. "...which are disposed in an array (dot pattern groups)" (Col. 5, L 53-64)

6.1.3. These dot patterns with length between the markers smaller than the length between the arrays (interval between the dot pattern group wider than the interval between the dot patterns). (Col. 5, L 53-64) See Figure 10 A below.

7.1.2. "wherein each field point comprises an array of fiducials (dot pattern groups)"
[Col.2, L 36-39]

7.1.3. With the field points (dot patterns) separated by smaller distances than the
fiducials (dot pattern groups). [Col.2, L 36-39] See Figure 11B below.

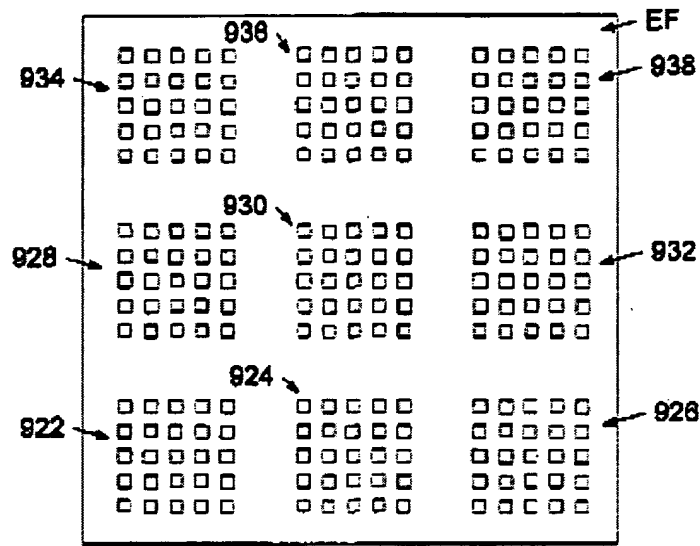


FIGURE 11B

Figure 11B - Reproduced from Smith U. S. Patent # 6, 963,390

7.2. With respect to claims 4 and 7, Smith teaches:

7.2.1. a plurality of rows in a predetermined direction as illustrated in Figure 11B
above

8. Claim 2 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Tominaga (U. S. Patent # 5,525,840).

The product-by-process of claim 2 and the product of claim 1 are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be

made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by a materially different process such as contact exposure or projection exposure. Tominaga teaches to create the alignment mark by exposure to a laser beam. (Col.1, L 37-38) The applicant claims the invention as described in claim 1 by the process of claim 2 (proximity exposure). The processes listed above, contact exposure and projection exposure, are also able to achieve the same end result as the proximity exposure process. Therefore the process in claim 2 is not unique to the product of claim 1.

Claim Rejections - 35 USC § 103

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tominaga U. S.

Patent #5,525,840 as applied to claim 1 above, and further in view of Yokota U. S. Patent #6,801,313.

10.1. With respect to claim 3, Tominaga teaches: all of the limitations of claim 1 as noted.

10.2. However, Tominaga fails to disclose a raised or grooved rectangular pattern.

10.3. Yokota teaches "a grooved pattern surrounding a mark pattern that is formed by engraving a groove or an indent in a prescribed position on a layer where a circuit pattern is formed." (Abstract) (See Figure 5 below)

10.4. It would have been obvious to one of ordinary skill in the art at the time the invention was conceived to include the grooved pattern of Yokota in the invention of Tominaga "so as to protect this mark pattern from being deformed by thermal expansion or contraction of this layer." (Yokota, Abstract)

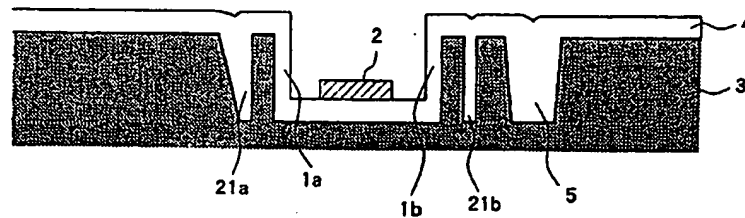


Figure 5: Reproduced from Yokota U. S. Patent #6,801,313

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Nohdo, in U.S. Publication # US 2004/0227945 discloses a wafer and method of detection with dot patterns in groups, useful for proximity exposure. .
12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rebecca C. Slomski whose telephone number is 571-272-9787. The examiner can normally be reached on Monday through Thursday, 7:30 am - 5:00 pm EST.

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13. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Akm Ullah can be reached on 571-272-2361. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

14. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



AKM ULLAH
SUPERVISORY PATENT EXAMINER

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571-272-9787

RCS